

emotion. It is therefore not surprising that so many scientists find it difficult to relate their work to the human community or even to understand that others might be interested in what they are doing. To them giving an interview becomes an ordeal.

Simple journalists or simple scientists?

There is no such thing as an environmental issue too complex for simple journalists; there are only simple scientists who fail to understand the complexity of the media and its responsibility to the public. A responsibility which more scientists should share, if they

want to ensure better and more in-depth reporting of the environment.

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VIEWPOINT

The Resource Assessment Commission loses its nerve: the Forest and Timber Inquiry sidesteps an evaluation of the impact of forestry operations on forest fauna

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Editor

In its final report of the Forest and Timber Inquiry, in March 1992, the Resource Assessment Commission (RAC) squibbed its responsibility on the issue of the impact of forestry operations on forest fauna. The opportunity and resources to undertake a comprehensive review were available; its failure to do so looks like a loss of courage.

In paragraph 7.29 (p. 160, Vol. 1, RAC 1992), the Commission concluded: "The literature about impacts of human uses of forests is not reviewed here: such a review would need to cover hundreds of Australian references, and thousands of references if the world literature were included. The Inquiry took the view that a comprehensive review of this type would do little to resolve the controversy about forest uses and their impact on forest values."

Given the available time (from the end of 1989 to March 1992) and budget (\$3.41m), (Greg McColl, Acting Chairman, Resource Assessment Commission in "Letters" in the *Sydney Morning Herald*, 6 November, 1992), the task of reviewing hundreds of Australian references on the human impacts on forests was

clearly possible. In fact, both published and unpublished sources were examined. The RAC had given a consultancy to the CSIRO Division of Wildlife and Ecology to undertake a survey of the published literature on the subject, while the unpublished literature was surveyed by the RAC with the assistance of the Department of Conservation and Land Management (CALM) in Western Australia (H.07, Vol. 2A, RAC 1992). The results of these surveys were certainly useful in identifying the size and scope of the research on the human impact on Australian forests, and this was probably the RAC's greatest contribution on the subject.

The RAC states that more than 2 000 published and unpublished scientific papers were identified at the early stages of the survey. Of these, 372 published papers (including 108 on animals) and 168 unpublished papers met the rules for inclusion in the database (H.17, Vol 2A; RAC 1992). Of the published papers, 268 contained new data, and 90 were review papers; of the unpublished papers, 126 contained new data and 42 were review papers (H.18, Vol. 2A, RAC 1992). (Subsequent to the issue of its final report in March 1992, the RAC

has continued to prepare a complete list of titles from this database. It should be available early in 1993.) Given that the database was prepared, and about a quarter of the papers were reviews of other papers, it is hard to understand why an overview was not possible. Further, there was no argument advanced as to why a review would do little to resolve the controversy. It seems more like a loss of nerve, perhaps engendered by political considerations or induced by changes in the composition of the RAC, than a reasoned decision.

One implication from the decision not to carry out the review is that neither original research papers, nor reviews, help resolve the conflict on the effect of forest uses. If this is the opinion of the RAC, then it would appear that it has failed to distinguish the scientifically measurable effects of human impact from the conflict over values. The RAC was not charged with the responsibility of resolving public conflict over forests, but it did carry the responsibility of assessing the resource and the impacts of human activities on that resource. By ducking the scientific discussion, the RAC has done nothing to help resolve the ongoing conflict. Was it a fear on the part of the RAC that a review of the literature would have unravelled the threads that revealed common problems, and thus forced it to identify politically unpalatable conclusions, including the increased likelihood of the extinction of those species adversely affected by current forestry operations?

The issue of species conservation was considered by the Inquiry (Appendix H, Vol. 2, RAC 1992), which focused on threatened species and recognized that forest-dwelling species have the potential to become extinct (Appendix J, Vol. 2, RAC 1992). Other attributes of biodiversity, such as genetic variation, were not specifically addressed, and the value of conserving fauna species throughout their range was not canvassed. Further, the density of a species, and the impact of logging and burning operations on density, was not considered. By concentrating on species with a high likelihood of extinction, the RAC shed little light on the vast majority of the remaining species, that is, those not on the national threatened species lists. Of note here is the RAC's uncritical acceptance of the Commonwealth's list of threatened species, prepared by the Australian National Parks and Wildlife Service, which is much shorter than the NSW list of endangered species under the *Endangered Fauna (Interim Protection) Act 1991*. Bats fare badly under the ANPWS procedure, with only one species listed, whereas, 19 of the

38 species of bats in New South Wales are currently recognized as endangered. The case for the conservation of bats in forests is strongly made in several chapters in *Conservation of Australia's Forest Fauna* (Eby 1991; Lunney 1991; Parnaby 1991; Richards 1991). The RAC reiterates the importance of hollows and old-growth trees but fails to consider other ecological attributes of forest habitat as argued by Recher (1991). The RAC holds up PVA (population viability analysis) as a new tool for assessing risk to populations (Appendix J) while ignoring geographic information system analysis and other methods of assessing fauna conservation. By concentrating on threatened species and PVA, the RAC has thus limited the debate, truncated options and underestimated the nature and extent of the risk to forest fauna populations not currently listed as nationally threatened. There is probably neither the time nor the commitment now for a supplementary inquiry into forest fauna, so this makes it even more important that the RAC be the subject of critical scrutiny.

That the human impact on forests needs special study is evident from the findings of the Inquiry. The Inquiry noted that: "Forest management agencies in general consider that, although it is far from complete, current understanding of the impact of wood-production activities is sufficient to enable forest managers to protect environmental values" (7.12, p. 157, Vol 1 RAC 1992). In the same paragraph, the RAC cited the Department of Conservation and Land Management (CALM) of Western Australia: "CALM believes that information currently available supports the contention that well-planned and conducted management operations, including timber harvesting, do not pose a threat to the functioning of forest ecosystems nor the survival of any species of flora or fauna in southwestern Australia. (Submission 451, p. 8)."

In contrast, the RAC notes on the next page (7.13, p. 158, Vol. 1, RAC 1992) that there are opposing views about the adequacy of information needed to assess impacts. It quoted from the Australian Conservation Foundation's submission: "Currently it is not possible to evaluate scientifically the efficacy of current prescription for conserving forest species in production forests." The RAC report then quotes the comment from the Bureau of Rural Resources: "The question remains as to whether scientific and technical knowledge can be raised to a point where managers can justifiably say that their forests are being managed on the basis of ecological sustainability." This

identifies a scientific debate that would have benefitted from an independent review by the RAC.

The Final Report in November 1991 of the Ecologically Sustainable Development (ESD) Working Group on Forest Use did not advance the debate. It pointed out, under the heading "Principles and policies for maintaining forest biodiversity," that: "There are currently significant information gaps on forest species..." (p. 79) (Commonwealth of Australia 1991). On p. 80 the report stated that "Research into the impact of forest activities on forest species and the monitoring of these impacts will provide the basis for developing environmental prescriptions for forest managers which are relevant to specific forest ecosystems." Such statements shy away from taking account of the contribution of the research to date on the issue and are thus less sharp than they could have been in their recommendations. Falling as it did mid-way between the first draft of the RAC report in July 1991 and the final report in March 1992, the ESD report on forests could have pushed the case of calling for a detailed assessment of forest fauna and the impacts of forest management upon it. By sticking with generalities, the ESD report neither forced the pace nor pointed the direction. One is left with the uncomfortable feeling that the ESD process had its focus more on wood than wildlife, a point made previously by Lunney (1991) and articulated strongly by Recher (1992).

We still do not know whether the forest management agencies, which claim there is sufficient knowledge for fauna conservation, or the opposing submissions, which claim there is insufficient knowledge, are working from the same database. The RAC was best placed to assess whether those making submissions had been lazy and built their case on only a modest number of references, or worse, selective, by presenting only that research which supported the case being argued. The RAC could have, and arguably should have, tackled this hard issue. Surely, at the centre of the conflict are such questions as to whether changes caused by logging operations are temporary or permanent, major or minor, or have even been properly identified or competently addressed. Are zoologists and ecologists leading the research and integral to decision-making, or are policy makers and managers making all the key decisions? These and other important ecological and administrative questions needed to be examined in a national overview.

One can readily agree with the conclusion (7.10, p. 157, Vol. 1, RAC 1992) that: "Forestry studies are expensive and time consuming."

This would suggest that one should use what little information there is to evaluate the impacts. Although it was not attempted in the Inquiry's report, a rough guess can be made of the cost of the 268 published papers that contained new data. It is not unreasonable to suggest that at least \$20 000 of research effort underpinned each paper. The figure for a thorough piece of research is more like \$50 000, if one includes wages, overheads and vehicle costs. This means that 268 original scientific published papers on all topics have cost Australians between \$5.4 and \$13.4 million. Given this expenditure, it is reasonable to suggest that the paid referee, the RAC, could do better than to sidestep drawing conclusions. This is especially the case since the Inquiry itself cost \$3.4 million.

These figures raise another point about priorities. A recurrent theme in the Royal Zoological Society's publication *Conservation of Australia's Forest Fauna* (Lunney 1991) was the urgent need for more research on fauna, with funding to undertake this research. When expenditure on one inquiry begins to approach the expenditure on all the original research on all topics, it provokes the conclusion that far too little has been spent on research. Furthermore, the RAC Report showed that there was an uneven representation of taxa. Table H.8 (H12, Vol. 2A, RAC 1992) identified 108 published papers on animals, of which 34 were on birds, which is the largest group dealing with impacts of forest use. There were only 15 on terrestrial invertebrates and none on soil invertebrates. Ponder (1992) points to the bias in the biodiversity debate, with invertebrates being neglected, yet one could hardly argue that bats, with four papers, reptiles with five papers, or amphibians with two papers, constitutes a proper coverage of these groups across Australia's 43 million hectares of remaining forested land.

In searching for ways of broadening the taxonomic basis of research on the impacts of forestry, one turns to the principal conclusions and recommendations of the Inquiry. Here the recommendations for institutional change would give little comfort to the supporters of unspectacular but vital creatures. In relation to Commonwealth institutional arrangements, the Inquiry's view was there are two options: bring together all Commonwealth responsibilities for forest policy within a single existing organization, or establish a new portfolio, the Department of Renewable Resources, with responsibility for forestry, fisheries, and possibly agriculture and land

management. The latter is the Inquiry's "preferred option" (p. XVI, Vol. 1, RAC, 1992).

With respect to state and territory institutional arrangements, the Inquiry noted that: "No amount of inter-agency consultation can substitute for an institution with responsibilities for integrated forest management" (p. XVII, Vol. 1, RAC 1992). The Inquiry then stated: "At state and territory level an integrated body responsible for conservation, land and forest management, both within and outside reserves, is the best way of ensuring that conservation goals are met in all forest tenures." Further, under the heading of *Research and Development*, the conclusion was that: "The Inquiry considers it inappropriate to separate the conservation and wood production components of research and development support. It holds the view that research into and development of both forest conservation and commercial aspects of production forestry should be the responsibility of a single organization." (p. XIVII, Vol. 1, RAC 1992). This organization should have, according to the Inquiry, the "responsibility for identifying priorities for research into all aspects of forest planning and management, for allocating and administering funds for the undertaking of research by appropriate organizations or individuals . . ." (p. XIVII, Vol. 1, RAC 1992).

From this reader's analysis, these centralist conclusions proposed by the Inquiry clash with those in the chapter on the Environmental Effects of Forestry Uses. It is in this chapter that the Inquiry noted that "CALM believes that . . . management operations . . . do not pose a threat to flora and fauna . . ." (7.12, p. 157, Vol. 1, RAC 1992). By suggesting that each state and territory has a CALM or equivalent, the Inquiry gives the impression that there is no need to scrutinize forestry management operations and their impact on flora and fauna. By suggesting a single national authority for determining priorities and funding, the Inquiry might be creating an organization with no more capacity to resolve issues than the RAC itself was able to do. Since the Inquiry took the view that "a comprehensive review . . . would do little to resolve the controversy about forest uses and their impacts on forest values . . ." (7.29, p. 160, Vol. 1, RAC 1992), it gives little confidence that another national agency would be able to come to grips with the issues. Concern for forest fauna is not likely to rank highly in an organization charged with responsibility for soil and water quality and tree growth. Controversial research, that is, research which might suggest alternatives to

the *status quo*, may well be less likely to survive in the funding process, as would such seemingly irrelevant animals as molluscs (see Ponder 1992 for an alternative viewpoint), especially in times of economic downturn, high unemployment, and reduced research funding. The conservation of biodiversity does not seem likely to be a top priority in an organization where commercially important research is a competitor.

At this point one might look for some guidance to the draft national forest policy statement, which was published in July 1992 (Commonwealth of Australia 1992), four months after the RAC's final Forest and Timber report. However, on page 22, under the heading *International responsibilities*, the first sentence of the draft policy reads: "As a world leader in developing sustainable forest management, forest practices and community involvement in forestry, Australia will continue to be a model for the conservation and sustainable use of forests." Given that the RAC Forest and Timber Inquiry (1992) was unable or unwilling to review the effects of logging and associated operations on forest values, it is difficult to see where the objective referee was for the above statement. It reads very much like the confident statements of the forest management agencies and little resembles the views of the Australian Conservation Foundation or the Bureau of Rural Resources quoted in the RAC Inquiry. If the RAC Forest and Timber Inquiry had not lost its nerve, and had critically examined the literature on the human impacts on forest values, we would be in a much stronger position to assess this claim in the draft national forest policy statement.

The value of biodiversity is becoming more widely recognized, and the parallel might be drawn that there is a value in a diversity of approaches to conserving Australia's forest fauna. The publication of a book of this title by the Royal Zoological Society of New South Wales (Lunney 1991) demonstrates the contribution that can be made by scientists reporting the conclusions of their own work, and the important role that independent societies, and conservation-oriented government departments with no commercial stake in forestry operations, have in pursuing the conservation/biodiversity debate. One of the conclusions that emerged from *Conservation of Australia's Forest Fauna* is that one cannot be assured that the current use of forests will maintain the biodiversity of their fauna. In fact, the opposite conclusion can more easily be drawn, namely that current levels of use, with only the current level of fauna research and management, will

result in a loss of forest fauna and a consequent diminution of the biodiversity of Australia's forest wildlife. Even if wood production is placed on a sustainable footing, the management of forests to achieve this goal will not necessarily dovetail neatly with a management plan in which biodiversity conservation is paramount. There is an urgent need for more research on a wide range of species. There is also a great need for the dissemination of information about human impacts and of developments in ecological ideas which can be applied to achieve the ideals set out in the Biodiversity Convention signed in Rio by the Australian Government in June 1992 (see this edition of *Australian Zoologist* for the full text of this convention) and the Strategy for the Conservation of Australia's Biodiversity (Biological Diversity Advisory Committee 1992).

If the RAC Inquiry on Forests and Timber had been only a minor inquiry, or its assembled information and recommendations inconsequential, the remarks made in this article would have been gratuitous. It is because the Forest and Timber Inquiry produced such a major and influential report that it is important to draw attention to its deficiencies and shortcomings. It is with the aim of keeping alive the debate on the future of Australia's forest fauna that this viewpoint was written. If I have missed the point or misrepresented the Inquiry's aims, or even just provoked responses about the alternative ways of looking at the relevant issues, I would welcome written, publishable comments.

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REFERENCES

- BIOLOGICAL DIVERSITY ADVISORY COMMITTEE, 1992. *A national strategy for the conservation of Australia's biological diversity*. Final draft, October 1992. DASET: Canberra.
- COMMONWEALTH OF AUSTRALIA, 1991. *Ecologically Sustainable Development working groups*. Final Report — Forest Use. AGPS: Canberra.
- COMMONWEALTH OF AUSTRALIA, 1992. *A new focus for Australia's forests*. Draft national forest policy statement. AGPS, July 1992.
- EBY, P., 1991. Finger-winged night workers: managing forests to conserve the role of Grey-headed Flying Foxes as pollinators and seed dispersers. Pp. 91–100 in *Conservation of Australia's Forest Fauna* ed by D. Lunney. Royal Zoological Society of New South Wales: Mosman.
- LUNNEY, D. (ed), 1991. *Conservation of Australia's Forest Fauna*. Royal Zoological Society of New South Wales: Mosman.
- LUNNEY, D., 1991. The future of Australia's forest fauna. Pp. 1–24 in *Conservation of Australia's forest fauna* ed by D. Lunney. Royal Zoological Society of New South Wales: Mosman.
- PARNABY, H., 1991. A sound species taxonomy is crucial to the conservation of forest bats. Pp. 101–12 in *Conservation of Australia's Forest Fauna* ed by D. Lunney. Royal Zoological Society of New South Wales: Mosman.
- PONDER, W., 1992. Bias or biodiversity. *Aust. Zool.* 28: 47–51.
- RECHER, H. F., 1991. The conservation and management of eucalypt forest birds: resource requirements for nesting and foraging. Pp. 25–34 in *Conservation of Australia's Forest Fauna* ed by D. Lunney. Royal Zoological Society of New South Wales: Mosman.
- RESOURCE ASSESSMENT COMMISSION, 1992. *Forest and Timber Inquiry Final Report*. Vols 1 and 2A. AGPS, March 1992.
- RECHER, H. F., 1992. Paradigm and paradox: sustainable forest management. In *Forestry Forum on Sustainable forest management* held at the University of Newcastle in October 1992. In press at the University of Newcastle.
- RICHARDS, G., 1991. Conservation of forest bats in Australia: do we really know the problems and solutions? Pp. 81–90 in *Conservation of Australia's Forest Fauna* ed by D. Lunney. Royal Zoological Society of New South Wales: Mosman.